L 9894-63 EPF(c)/EWP(j)/BDS/EWT(m)--ASD--Pr-4/Pc-4--RM/WAT/WH
ACCESSION NR: AP3000416 S/0076/63/037/005/1063/1068

AUTHOR: Tsentsiper, A. B.; Yeremin, Ye. N.; Kobozev, N. I. 65

TITLE: Study of the conversion of hydrocarbons to acetylene in the discharge in a static system. Two. Effect of hydrogen and argon on the conversion rate

SOURCE: AN SSSR. Zhurnal fizicheskoy khimii, v. 37, no. 5, 1963, 1063-1068

TOPIC TAGS: conversion of hydrocarbons, acetylene, effect of hydrogen, argon, cracking rate of methane, ethane, propane or ethylene, electrocracking

ABSTRACT: The addition of H or A to methane under low discharge efficiency conditions activates the discharge, evidently owing to the formation of an arc. Similiar activation of the discharge occurs on its localization between carbon growths on the electrodes. There is no specific effect of H on the cracking rate of methane, ethane, propane, or ethylene. Discharge activation is assumed to be result of an increase in molecular temperature. A chain mechanism is probable for electrocracking with thermal activation of the separate stages. Orig. art. has: 1 formula, 4 figures, 1 table.

Card 1/2

L 12700-63 EPF(c)/EWT(m)/BDS Pr-4 RM/WW

ACCESSION NR: AP3002927 S/0076/63/037/006/1264/1269

AUTHOR: Tsentsiper, A. B.; Yeremin, Ye. N.; Kobozev, N. I.

TITLE: Conversion of hydrocarbons to acetylene in an electric discharge in a static system. 3. Study of electrocracking of methane, ethane, and propane to acetylene in the arc.

SOURCE: Zhurnal fizicheskoy khimii, v. 37, no. 6. 1963, 1264-1269

TOPIC TAGS: hydrocarbon, acetylene, electrocracking, methane, ethane, propane

ABSTRACT: The kinetics and energetics of the conversion of methane, ethane, and propane to acetylene under conditions of the active forms of the discharge have been investigated. In all cases, the chief reaction products are acetylene and hydrogen. A general kinetic scheme has been applied to these hydrocarbons, and an explanation has been given of the kinetic stability of acetylene which results in its being a major cracking product. The concentrations of acetylene (up to 26%) obtained in the electrocracking of methane homologs are much greater than the respective concentrations in the electrocracking of methane (up to 20%), the consumption of energy being diminished. Orig. art. has: 3 tables, 4 equations, and 3 figures.

Association: Moscow State University

Card 1/2

TSENTSIPER, A.B.; TOKAREVA, S.A.

Reaction of carbon monoxide with sodium and potassium superoxides.
Zhur.neorg.khim. 6 no.11:2474-2480 '61. (MIRA 14:10)
(Carbon monoxide) (Sodium superoxide)
(Potassium superoxide)

S/076/62/036/006/010/011
B117/B180

AUTHOR: Tsentsiper, A. B.

TITLE: Second Conference on the Chemistry of Peroxidates

PERIODICAL: Zhurnal fizicheskoy khimii, v. 36, no. 6, 1962, 1392-1394

TEXT: The Conference on the Chemistry of Peroxidates held in Moscow November 14 to 18, 1961, had been convened by the Institut obshchey i neorganicheskoy khimii im. N. S. Kurnakova AN SSSR (Institute of General and Inorganic Chemistry imeni N. S. Kurnakov AS USSR); Nauchno-issledovatel'skiy institut khimii pri Gor'kovskom gosudarstvennom universitete im. N. I. Lobachevskogo (Scientific Research Institute of Chemistry of the Gor'kiy State University imeni N. I. Lobachevskiy); Nauchno-issledovatel'skiy institut osnovnoy khimii Goskomiteta po khimii pri Sovete Ministrov SSSR (Scientific Research Institute of Basic Chemistry of the State Committee of Chemistry at the Council of Ministers USSR). Delegates attended from 60 scientific research institutes of the AS USSR, academies of sciences of the Soviet Republics, of the Komitet po khimii (Committee for Chemistry), higher education establishments and works.

Card 1/8

300 participants submitted 80 reports. The work of the Conference was done by two sections, one for inorganic and one for organic chemistry. I. I. Vol'nov (Moscow) gave a critical survey on the present state of research in the field of inorganic peroxide compounds in the USSR and abroad. The following reports were given: by G. A. Razuvayev, Corresponding Member AS USSR, (Gor'kiy) on new ways of synthesizing and applying organic peroxides; by A. I. Brodskiy (Kiyev) and collaborators (V. A. Lupenok-Burmanina, A. P. Potemskaya, N. A. Vysotskaya, I. F. Franchuk) on the examination of various reactions by means of isotopic exchange, by A. M. Gurevich (Moscow) on the synthesis and study of uranyl peroxide complexes. Reports by K. P. Mishchenko, N. Ye. Flis, K. Yu. Salnis, V. A. Kustodina, N. V. Pakhomova (Leningrad) contained information on thermodynamic characteristics of different processes using inorganic compounds. Numerous reports submitted by the IONKh AS USSR (Moscow) dealt with the application of physicochemical analyses for the examination of systems with hydrogen peroxide; they included reports by T. A. Dobrynina and S. Z. Makarov (deceased) on "Peroxides of lithium;" by T. I. Arnol'd and S. Z. Makarov (deceased) on "Synthesis and properties of peroxides of copper;" by N. K. Grigor'yeva, T. A. Arnol'd, and

S. Z. Makarov: "Production of peroxides of alkali and alkaline earth metals;" by K. I. Selezneva, N. K. Grigor'yeva, and S. Z. Makarov (deceased): "Peroxidates of niobium and tantalum;" by B. S. Dzyatkevich and T. A. Dobrynina: "Examination of peroxide hydrates of rubidium and cesium carbonates;" by L. V. Soboleva and S. Z. Makarov (deceased): "Peroxidates of rare metals and rare-earth metals;" by K. Ye. Mironov: "Existence of ternary compounds in the $NH_3$ - $H_2O$ - $H_2O$ system;" by I. A. Rusinov: "Synthesis and quantitative analysis of red perchromates of groups 1 and 2;" by V. I. Tikhomirov, B. V. Levin, and V. V. Mironova: "Some peroxidates of zirconium;" by V. A. Shcherbinin (Moskovskiy energeticheskiy in-t (Moscow Power Engineering Institute)): "Synthesis of peroxy-molybdates of magnesium, calcium, strontium, and cobalt." L. A. Isarova (Khar'kov) reported on a new industrial synthesis: "Method of producing barium peroxide from barium hydroxide." V. G. Karpenko, A. S. Poteryayko (Khar'kov), Ye. I. Sokovnin, S. Z. Makarov (deceased)(Moscow), S. A. Tokareva, M. S. Danilova, I. I. Vol'nov, A. N. Shatunina (Moscow) reported on the synthesis of highest oxygen compounds. Reports were given on the catalytic decomposition of hydrogen peroxide solutions by I. M. Reybel', Kishinevskiy sel'skokhozyaystvennyy

institut (Kishinev Agricultural Institute), A. S. Fomenko, T. M. Abramova, N. L. Galkina (Kiyev), G. A. Katayev, L. N. Rozanov (Tomsk), F. M. Perel'man, A. K. Verkhovskaya, A. Ya. Zvorykin (IONKh AS USSR, Moscow): "Decomposition of hydrogen peroxide over catalysts of the system $Na_2MoO_4$ - $CoCl_2$ - $CuCl_2$ in dependence on the pH of the medium," by A. Ya. Zvorykin, F. M. Perel'man, S. N. Shakhova (IONKh AS USSR, Moscow): "Catalytic activity of rare elements during the decomposition of hydrogen peroxide;" A. B. Tsentsiper (Moscow): "Kinetic studies of the formation and decomposition of peroxidates of calcium." The following members of the Moskovskiy universitet (Moscow University) reported on the synthesis of hydrogen peroxide: N. I. Kobozev, I. A. Semiokhin, Ye. N. Pitskhelauri: "Electrosynthesis of pure, concentrated hydrogen peroxide;" N. I. Kobozev, L. I. Nekrasov, I. I. Skorokhodov: "Mechanism of hydrogen peroxide formation at low temperatures;" I. A. Semiokhin, N. I. Kobozev, Ye. N. Pitskhelauri: "Kinetics and mechanism of the electrosynthesis of hydrogen peroxide." V. N. Chamova, I. I. Vol'nov, A. B. Tsentsiper of the IONKh AS USSR reported on the synthesis of $H_2O_2^{18}$ from $H_2O^{18}$ vapor dissociated in a glow discharge. A number of reports dealt with the formation

Second Conference on the Chemistry ...

of percarbonates and perborates during electrolysis: N. Ye. Khomutov, M. F. Sorokina, L. S. Filatova (Moscow) on "Study of the anodic formation of peroxidates in borate and carbonate solutions and their mixtures;" A. V. Yanush (Khar'kov) on "Production of sodium borate by electrolytic and chemical methods;" O. B. Khachaturyan, A. P. Kravchinskiy (Moscow) on "Study of anodic processes and formation conditions of peroxidates in phosphate solutions;" A. Yu. Prokopchik, A. P. Kazragis (Vil'nyus): "Comparison of some properties of dehydrated and 'low' perborates;" T. P. Firsova, A. N. Molodkina (Moscow): "Study of reactions between carbonic acid and alkaline solutions of hydrogen peroxide and the synthesis of percarbonates;" A. Yu. Prokopchik, A. I. Vatsekyalis (Vil'nyus): "Electrochemical properties of peroxy-carbonates." V. S. Gurman, V. I. Papisova, Ye. I. Yakovenko, G. B. Sergeyev (Moscow University) reported on the application of the paramagnetic resonance method of detecting free radicals. Further reports were given on the results of work done in the Gor'kiy State University (under the supervision of G. A. Razuvayev and V. A. Shushunov) by G. A. Razuvayev, V. R. Likhterov, V. S. Etlis: "Synthesis and reactions of some azyl sulfonyl peroxides with organic solvents;" G. A. Razuvayev, N. S. Vyazankin: "Reactions of

Card 5/8

peroxidates with tetraethyl tin, hexaethyl distannane and their analogs;" N. S. Vyazankin, G. A. Razuvayev, O. A. Shchepetkova, O. S. D'yachkovskaya: "Reactions of peroxidates with mixed elemental organic compounds of group IV;" G. A. Razuvayev, A. I. Kirillov, V. S. Etlis: "Synthesis and decomposition of alkyl(aryl)-oxyformyl derivatives of bis(1-hydroperoxy-cycloalkyl)peroxides;" G. A. Razuvayev, L. I. Terman, D. I. Yanovskiy: "Radical reactions of percarbonates in solutions." I. B. Rabinovich, V. I. Tel'noy, L. I. Terman, A. S. Kirillova, and G. A. Razuvayev reported on "Decomposition heat of some peroxides;" I. B. Rabinovich, V. I. Tel'noy, P. N. Nikolayev, G. A. Razuvayev reported on "Thermochemistry and reaction kinetics of benzoyl peroxide with hexathyl ditin." T. G. Brilkina and V. A. Shushunov gave a survey of synthesis methods and classification in their report on "Organometallic peroxidates." Yu. A. Aleksandrov, T. G. Brilkina, and V. A. Shushunov reported on the synthesis of new organometallic peroxidates: "Some organic peroxidates of tin and lead." Reports on the decomposition of hydroperoxides were given by E. A. Kuz'mina, V. A. Shushunov, M. K. Shchennikova: "Study of the decomposition of cumene hydroperoxide catalyzed with cobalt salts;" V. A. Shushunov, V. A. Yablokov, and N. V. Yablokova: "Reclassification

kinetics of some peresters;" V. A. Shushunov (Gor'kiy): "Acid-catalytic decomposition of organic hydroperoxides." I. A. Korshunov, A. I. Kalinin (Gor'kiy), and V. A. Shushunov reported on the determination of organic peroxidates and the examination of acetone diperoxide. Members of the Yerevanskiy gosudarstvennyy universitet (Yerevan State University) gave the following reports: N. M. Beyleryan and O. A. Chaltykyan on "Reaction kinetics of persulfuric potassium with amines;" O. A. Chaltykyan and B. M. Sogomonyan on the "Reaction rate of benzoyl peroxide - triethanol amine in organic solvents." Members of the Nauchno-issledovatel'skiy institut spirtov g. Novokuybyshevska (Scientific Research Institute of Alcohols, Novokuybyshevsk) gave the following reports: V. L. Antonovskiy, Yu. D. Yemelin, and L. D. Sheyko on "Kinetics of the synthesis of cumyl peroxide;" V. L. Antonovskiy and L. M. Dyagileva on "Kinetics of the acid-catalytic decomposition of cumene peroxide in phenol acetone;" V. L. Antonovskiy, Ye. M. Makalets, G. P. Golysheva, and V. A. Terent'yev on "Kinetics and chemistry of formation and decomposition of cumene hydroperoxide during the oxidation of cumene." Yu. A. Ol'dekop, A. N. Sevchenko, I. P. Zyat'kov, G. S. Bylina, A. P. Yelnitskiy of the Belorusskiy gosudarstvennyy universitet (Belorussian State University) reported on

"Unsymmetrical diacyl peroxides." Yu. A. Ol'dekop, K. L. Moyseychuk, A. N. Sevchenko, and I. P. Zyat'kov of the IFOKh AS BSSR reported on "Synthesis and properties of 1,1-bis-acyl peroxy-dicyclohexyl peroxides." Criticism was expressed at the insufficient development of experimental and theoretical work in the chemical thermodynamics of processes with peroxides, in the analytical chemistry of peroxidates, the application of spectrophotometry and X-ray structural analysis, and of kinetic studies on inorganic peroxidates. It was recommended that the synthesis of inorganic peroxides rich in active oxygen, and the studies of organic peroxides be intensified. The publication of monographies was also recommended. It was decided that the work in the chemistry of peroxidates be coordinated.

TSE[illegible], A.B.; [illegible], Yu.N.; [illegible], N.I.

Comparative study of the kinetics of the conversion of different hydrocarbons to acetylene in an electric discharge in a static system. Dokl. AN SSSR 141 no.1:117-120 N '61. (MIRA 14:11)

1. Moskovskiy gosudarstvennyy universitet im. M.V. Lomonosova. Predstavleno akademikom B.A. Kazanskim.
(Hydrocarbons)
(Acetylene)
(Chemical reaction, Rate of)

TSENTSIPER, A.B.; YEREMIN, Ye.N.; KOBOZEV, N.I.

Effect of hydrogen and argon on the electrocracking of methane and ethylene. Dokl. AN SSSR 141 no.2:378-380 N '61. (MIRA 14:11)

1. Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova.
(Methane) (Ethylene) (Cracking process)

29530
S/078/61/006/011/005/013
B101/B147

5.2100

AUTHORS: Tsentsiper, A. B., Tokareva, S. A.

TITLE: Interaction of carbon monoxide with sodium and potassium peroxide

PERIODICAL: Zhurnal neorganicheskoy khimii, v. 6, no. 11, 1961, 2474-2480

TEXT: Since no data are available on the reactivity of peroxides of alkali metals, the reaction of $NaO_2$ and $KO_2$ with CO and CO + $H_2O$ was studied. [Abstracter's note: Compounds $NaO_2$ and $KO_2$ should be better termed dioxides.] The reaction flask containing 0.5 - 0.8 g of alkali dioxide was evacuated to $10^{-4}$ mm Hg and heated either in a TC-15 (TS-15) thermostat at 95°C, or in a glycerol bath at 140, 160, or 180°C. Then, CO or CO + $H_2O$ were supplied. The changes in pressure were measured by means of a butyl-phthalate differential manometer (15 mm dibutyl phthalate = 1 mm Hg). $NaO_2$ (86.2%) and $KO_2$ (92.6%) were used as initial products. Impurities consisted of peroxide ($Me_2O_2$), carbonate, and hydroxide. CO

Card 1/04

Interaction of carbon monoxide...

was synthesized from 85% HCOOH and $H_2SO_4$ at 80°C. The total oxygen of the solid phase was determined by decomposing with 0.5% $CuSO_4$ solution; active $O_2$ (peroxide $O_2$) was determined by titration with 0.1 N $KMnO_4$; dioxide $O_2$ was calculated from the difference. The total alkalinity and $CO_2$ bound as carbonate were titrimetrically determined (difference of equivalence points for phenolphthalein and methyl orange serving as indicators). The analytical error was <1%. Investigation of thermal stability of $NaO_2$ at the temperatures mentioned showed that $NaO_2$ was stable up to 95°C. Only at higher temperatures, the reaction sets in: $2NaO_2 \rightarrow Na_2O_2 + O_2$ (1). Data for the reaction with dry CO are given in Table 2. For $NaO_2$, the following reactions are assumed above 100°C:

$$NaO_2 \rightarrow \begin{cases} Na_2O_2 + O_2 & (2) \\ Na_2CO_3 + O_2 + CO & (3). \end{cases}$$

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Interaction of carbon monoxide...

$KO_2$ reacts with CO already at 95°C: $2KO_2 + CO = K_2CO_3 + O_2$ (4). Since $KO_2$ only decomposes at 400°C, this reaction may be due to the higher reactivity of $KO_2$. In the beginning, the intermediate complex $KO_2 \cdot CO$ forms. This absorption of CO causes an initial fall in pressure in the apparatus. The reaction with CO and $H_2O$ vapor was studied at $p_{CO}$ = 6 - 79 mm Hg and $p_{H_2O}$ = 11 mm Hg, and at $p_{CO}$ = 11 - 40 mm Hg and $p_{H_2O}$ = 20 mm Hg. The reaction already sets in at 70°C: $2NaO_2 + H_2O = 2NaOH + 3/2\ O_2$ (5); $2NaO_2 + CO \xrightarrow{H_2O} Na_2CO_3 + O_2$ (6). Formation of carbonate proceeds over a stage catalyzed by NaOH: $CO + O = CO_2$ (7) and $CO_2 + 2NaOH \rightarrow Na_2CO_3 + H_2O$ (8). In the absence of NaOH, reaction Eq. (7) does not take place. Experiments with high $p_{CO}$ showed a lower degree of conversion of $NaO_2$, since in this case $H_2O$ diffusion to the $NaO_2$ surface was inhibited and reaction Eq. (6) was

Interaction of carbon monoxide...

suppressed. A paper by T. V. Rode, G. A. Gol'der (Izv. AN SSSR, Otd. khim. n., 299 (1956)) is mentioned. There are 3 figures, 3 tables, and 11 references: 5 Soviet and 6 non-Soviet. The two most recent references to English-language publications read as follows: P. Gills, J. Margrave, J. Phys. Chem., 60, 1334 (1956); E. Neuman, J. Chem. Phys., 2, 31 (1954).

SUBMITTED: September 15, 1960

Table 2. Interaction of $NaO_2$ and $KO_2$ with carbon monoxide.

Legend: (a) temperature, °C; (b) initial pressure, mm Hg; (c) duration of experiment, min; (d) composition of the end product, % by weight; (e) total degree of conversion, %; (f) degree of conversion up to $Na_2O_2$, %; (g) degree of conversion up to $Na_2CO_3$, %.

S/020/61/141/001/015/021
B103/B147

AUTHORS: Tsentsiper, A. B., Yeremin, Ye. N., and Kobozev, N. I.

TITLE: A comparative study of the kinetics of transformation of various hydrocarbons into acetylene during electric discharge in a static system

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 141, no. 1, 1961, 117-120

TEXT: The authors compared the kinetics of electrocracking of $CH_4$; $C_2H_6$; $C_3H_8$; $C_2H_4$; and $C_3H_6$. They studied cracking under static conditions with the use of glow and arc discharges with high voltage. Pressure was 35 and 70 mm Hg, amperage 100 and 300 ma. The methods were thoroughly described by Ye. N. Yeremin and M. Z. Al'tshuler et al. (ZhFKh, 20, no. 5 (1947)). After the experiment, gas samples were analyzed for their content of $C_2H_2$, $C_2H_4$, and $C_3H_6$. Hydrogen was burned on copper oxide at 250°C. $CH_4$, $C_2H_6$, and $C_3H_8$ were determined from the residue after $H_2$ combustion. Kinetic calculations considered the two most important reaction directions:

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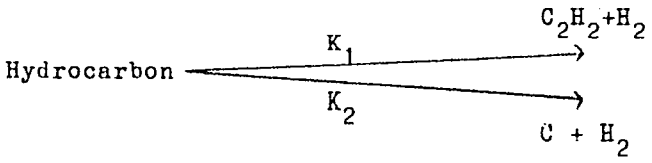
A comparative study of the kinetics...




The total constant of the decomposition rate of hydrocarbons was determined from the first-order equation: $K_1 + K_2 = (1/\tau)\ln[1/(1-\Delta)]$, where $\Delta$ is the degree of total transformation (ratio of the amount decomposed to the initial amount). First, the acetylene yield rises; after prolonged reaction, its concentration drops due to decomposition. The low energy consumption, as compared with production of $C_2H_2$ from carbide, shows the advantages of cracking (Table 2). The fraction of total energy thermochemically required for producing a certain amount of $C_2H_2$ can be estimated from the thermochemical efficiency ($\eta$) of the discharge (Table 2). Its high value (0.4 - 0.5) distinguishes electrocracking from other endothermic reactions during discharge. To explain this, a chain mechanism is assumed. Though the kinetic constants (Table 1) have similar values for different hydrocarbons, the sum $K_1 + K_2$ increases on transition to high amperages and with

increasing electrode spacing. The cracking ability of all hydrocarbons increases, to the same extent, on transition to a more powerful discharge. If the initial cracking rate is expressed by $(K_1+K_2)\cdot P_{init}$ ($P_{init}$ being the initial hydrocarbon pressure), and if this rate is referred to the unit energy, it is found that the value determined, or the "energetic capacity of the discharge" (Ye. N. Yeremin, Khim. prom., no. 2, 73 (1958); ZhFKh, 32, no. 11, 2543 (1958)) maintains approximate constancy for all hydrocarbons, irrespective of test conditions. Possible deviations are not regular and only accidental. This conclusion may be interpreted by stating that the rate of transformation of hydrocarbons in a glowing arc does not depend on their structure but on the energy of discharge. Electrocracking of the hydrocarbons mentioned may be conducted by the technological procedure of $CH_4$ cracking; it will raise the yield in $C_2H_2$ and save energy. There are 1 figure, 2 tables, and 5 Soviet references.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova (Moscow State University imeni M. V. Lomonosov)

S/020/61/141/001/015/021
B103/B147

A comparative study of the kinetics...

PRESENTED: June 7, 1961, by B. A. Kazanskiy, Academician

SUBMITTED: May 30, 1961

Table 1. Principal indices of electrocracking of $CH_4$, $C_2H_6$, $C_3H_8$, $C_2H_4$, and $C_3H_6$ under different conditions of discharge. Legend: (1) Electrode spacing, mm, (2) amperage, ma, (3) pressure, mm Hg, (4) maximum concentration of $C_2H_2$, % by volume, (5) total cracking, % of maximum concentration, (6) average sums of constants $(K_1+K_2)$ $(sec^{-1} \cdot 10^4)$ of the decomposition rate of hydrocarbons, (7) energetic efficiency of discharge.
Table 2. Legend: (1) Energy consumption, kwh per 1 $m^3$, (2) thermal effect, kwh per 1 $m^3$ of $C_2H_2$, for the reaction: hydrocarbon $\longrightarrow C_2H_2 + H_2$, (3) thermochemical efficiency ($\eta$) of discharge.

Card 4/4

S/020/61/141/002/016/027
B103/B110

AUTHORS: Tsentsiper, A. E., Yeremin, Ye. N., and Kobozev, N. I.

TITLE: Effect of hydrogen and argon on electrocracking of methane and ethylene

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 141, no. 2, 1961, 378-380

TEXT: The effects of hydrogen and argon on electrocracking of methane $CH_4$ and ethylene $C_2H_4$ were compared. The apparatus had been described by the authors (DAN, 141, no. 1 (1961)). The conversion degree A was determined on the basis of pressure changes. It was assumed that hydrocarbon mainly decomposes in two directions:

$$\text{hydrocarbon} \rightarrow C_2H_2+H_2, \quad \text{hydrocarbon} \rightarrow C+2H_2$$

with the change of volume remaining constant. The experiment was conducted as follows: At a certain partial pressure of hydrocarbon, $H_2$ or Ar were added up to a total pressure of 50 and 150 mm Hg. Next, the discharge was switched on (amperage: 300 ma) for a time

Card 1/4

Effect of hydrogen and...

(τ) of 2, 3, 4, 5, 6, 8, 10, 20, 40, and 100 sec. After cooling the reaction vessel, the pressure was measured and the gas analyzed as soon as the conversion was approximately 50%. At a pressure of 40 mm Hg, the cracking rates of $CH_4$ and $C_2H_4$ were found to be approximately of the same magnitude. Ar or $H_2$ additions impede the cracking of these gases almost equally and the more so the higher the partial pressures of $H_2$ or Ar. At a total pressure of 150 mm Hg, cracking is reduced to about half its value. When reducing the pressure of initial $CH_4$ to 10 mm Hg and without admixtures the cracking rate of $CH_4$ is only 1/50 that of $C_2H_4$. $C_2H_4$ cracking is impeded by $H_2$ and also by Ar. If $H_2$ or Ar are added to $CH_4$, cracking is rapidly activated, and $CH_4$ cracks almost as fast as $C_2H_4$. Thus, also the discharge is changed. At a pressure of 40 mm Hg, the discharge shows a yellow, slightly blackening flame in pure hydrogen or in mixtures with $H_2$ or Ar. With $CH_4$ and at a pressure of 10 mm Hg, the discharge shows a bluish light which becomes intensely yellow as soon as $H_2$

Card 2/4

or Ar are added. With $C_2H_4$ and at the same pressure the discharge shows a yellow flame. Hence, $CH_4$ cracking is activated by an increase of the total $CH_4$ pressure, by an $H_2$ admixture and even more so by Ar. Electrocracking of $CH_4$ was found to be activated by three completely different causes: increase of pressure, of amperage, and by localizing the discharge between glowing points on the carbon coating of the electrodes. The activation is due to a transformation of the slightly active, glowing discharge into a chemically more active arc discharge. The molecular temperatures of the latter are higher and thus have a positive effect upon cracking. It is assumed that only electron activation causes processes of considerable activation energies (cracking of C-C and C-H bonds). The newly formed radicals and atoms take part in the chain-like continuation of the process. This requires thermal activation. The chain-like mechanism of this process is confirmed by the high values of thermal coefficients in hydrocarbon cracking (0.4 - 0.6). It is concluded that $H_2$ does not have a specific effect upon electrocracking of hydrocarbons. There are 1 figure, 1 table, and 6 references: 4 Soviet and

Effect of hydrogen and...

S/020/61/141/[illegible]/027
B103/B110

2 non-Soviet. The two references to English-language publications are as follows: H. M. Stanley, A. W. Nash, J. Soc. Chem. Ind., 48, 235 (1929). I. H. Perril, W. G. Ewersoll, Ind. and Eng. Chem., 33, No. 10, 1316 (1941).

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova (Moscow State University imeni M. V. Lomonosov)

PRESENTED: June 7, 1961, by B. A. Kazanskiy, Academician

SUBMITTED: May 30, 1961

Card 4/4

VOL'NOV, I.I.; TSENTSIPER, A.B.; CHAMOVA, V.N.

Synthesis of tagged hydrogen peroxide from vapors of heavy oxygen water in a glow discharge. Izv.AN SSSR Otd.khim.nauk no.3:531 Mr '61. (MIRA 14:4)

1. Institut obshchey i neorganicheskoy khimii imeni N.S.Kurnakova AN SSSR.

(Hydrogen peroxide) (Oxygen—Isotopes)

S/062/61/000/003/011/013
B117/B208

11.1190

AUTHORS: Vol'nov, I. I., Tsentsiper, A. B., and Chamova, V. N.

TITLE: Synthesis of tagged hydrogen peroxide from vapors of heavy oxygen water in a glow discharge

PERIODICAL: Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk, no. 3, 1961, 531

TEXT: The authors of the present "Letter to the Editor" report the realization of the $H_2O_2^*$ synthesis from $H_2O^*$-vapors containing $1.75 \pm 0.01$ atom% $O^{18}$ in a glow discharge. They were extracted from the discharge gap and frozen out in a trap cooled by liquid nitrogen. The device used has been previously described (Ref. 1: A. I. Gorbanev, A. B. Tsentsiper, Izv. CO AN SSSR 1958, no. 5, 45). The glassy substance frozen out in the trap contained 28.4 wt% $H_2O_2^*$ after melting. The $O^{18}$ content of this peroxide was $1.82 \pm 0.01$ atom% (mean value obtained from 35 mass-spectroscopic determinations of five samples). The concentration coefficient is 1.04. The method applied by the authors for preparing

Synthesis of tagged hydrogen...

$H_2O_2^*$ is, according to their opinion, more convenient than that described in publications, since in this way a sufficiently concentrated and pure $H_2O_2^*$ may be obtained directly. [Abstracter's note: This is a full translation from the original]. There is 1 Soviet-bloc reference.

ASSOCIATION: Institut obshchey i neorganicheskoy khimii im. N. S. Kurnakova Akademii nauk SSSR (Institute of General and Inorganic Chemistry imeni N. S. Kurnakov, Academy of Sciences USSR)

SUBMITTED: January 11, 1961

Card 2/2

ANDREYEV, F. (g.Saratov); TSENTSIPER, I. (g.Saratov); BOKOVA, Ye. (g.Saratov)

Machine for transporting cylinders of liquid gas. Zhil.-kom. khoz. 11 no.2:26-27 F '61. (MIRA 14:5)
(Liquified petroleum gas---Transportation)

ANDREYEV, F.G.; TSENTSIPER, I.A.; BOKOVA, Ye.M.

Tank truck for the transportation of liquefied gases.
Gaz. prom. 6 no. 1:32-35 '61. (MIRA 14:1)
(Liquefied gases—Transportation)

NIKITENKO, Ye.; SMIRNOV, V.A.; TSVETKOVA, I.A.

Bibliography. Gaz. prom. 9 no.10:5[illegible] 1964.

(MIRA 17:12)

ROGUSHKIN, Vladimir Ivanovich, inzh., TSENTSIPE , Moisey Abramovich, inzh.; NADEL', A.G., red.; GRIGOR'YEVA, .S., red.izd-va; BELOGUROVA, I.A., tekhn. red.

[Gas-cutting machine for finishing the b tt ends of springs] Stanok dlia obrabotki tortsov pruzhin g voi rezkoi. Leningradskii dom nauchno-tekhnicheskoi p agandy. Obmen peredovym opytom. Seriia: Mekhanicheskaia brabotka metallov, no.21) (MIRA 15:12)

(Gas welding and cutting) (Springs (M chanism))

TSENTSIPER, M.

Proportions and asymmetry in man. Nauka i zhizn' 29 no.9:92-93 S '62. (MIRA 15:10)

(ANATOMY, HUMAN)

KIYEVSKIY, Frants Romanovich; TSENTSIPER, M.B., redaktor; SENCHILO, K.K., tekhnicheskiy redaktor

[Pulmonary resection; anatomical and pathological studies of changes in lungs following resection. Regeneration of the lungs] K uchen'iiu o rezektsii legkikh; anatomopatologicheskie issledovaniia izmenenii v legkikh posle rezektsii. Regeneratsiia legkikh. Izd. 3-e. Moskva, Gos. izd-vo med. lit-ry, 1956. 217 p.
(LUNGS--SURGERY) (MLRA 9:7)

TSENTSIPER, M. B.

Function of the heart. IUn. tekh. 3 no.8:49-52 Ag '59.
(HEART) (MIRA 12:12)

TSENTSIPER,M., (Moskva)

Experiments in the mass production of laboratory models by students. Fiz. v shkole 15 no.5:92-94 S-O '55. (MLRA 9:1)

1. Direktor 437-y shkoly
(Physical instruments)

TSENTSIPER, M.B.

47-58-3-5/27

AUTHOR: Tsentsiper, M.B., (Moscow)

TITLE: Some Questions of Communist Education in the Teaching of Physics (Nekotoryye voprosy kommunisticheskogo vospitaniya v prepodavanii fiziki)

PERIODICAL: Fizika v Shkole, 1958, Nr 3, pp 25-34 (USSR)

ABSTRACT: Physics assists in creating in the students the basis of a genuine scientific materialistic world outlook and to raise among them a scientific atheistic spirit. The most characteristic feature of modern physics is its wide and many-sided experimental possibilities. Certain bourgeois physicists assert that the world could be perceived only mathematically without resorting to practical experience, but this is only an attempt to lead science away from every-day life and to explain its progress by idealistic conclusions. The Soviet teacher should be aware of these tendencies, because the role of abstraction in physics grows from the 6th to the 10th class and this fact contains well-known dangers. The main task of the communistic teacher should be to make his students familiar with every-day life and to show them the connection between physics at school and its application in practice. The

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Some Questions of Communist Education in the Teaching of Physics 47-58-3-5/27

communist teacher should also point out the huge achievements of Soviet science and engineering. The role of Soviet scientists in propagating the peaceful use of atomic energy should also be emphasized. There are 6 photographs, and 9 Soviet references.

ASSOCIATION: 437ya srednyaya shkola (The 437th Secondary School)

AVAILABLE: Library of Congress

Card 2/2 1. Physics-Study and teaching

8(6), 14(6) SOV/47-59-2-6/31

AUTHOR: Tsentsiper, M.B.

TITLE: The Materials of the 7-Year Plan in the Teaching of Physics (Materialy semiletnego plana v prepodavanii fiziki)

PERIODICAL: Fizika v shkole, 1959, Nr 2, pp 20-32 (USSR)

ABSTRACT: To bring tuition in close contact with practical life is an urgent demand facing the teacher at present, and the new problems of the country's technical progress will undoubtedly be appropriately reflected in the future programs and textbooks of physics. However, the physics teacher should not wait for these changes to appear. The truly efficient teacher can do a lot to bring the course of physics nearer to life and to the tasks set forth by the 7-year plan. The purpose of the present article is to furnish the instructor with some material on questions of engineering power - the most important section of the 7-year plan. It is recommended to utilize this material in the 7th, 9th and 10th classes of secondary schools at the teacher's discretion. The 7-year plan provides that the share of oil and gas in the total

Card 1/7

The Materials of the 7-Year Plan in the Teaching of Physics

volume of fuel output will rise from the present 31 % to 51 % in 1965, while the share of coal will decrease from 60 to 43 %. Oil and gas will also be used in industrial installations, power plants, railroad and water transport. The author gives a table showing the structural changes in the general recovery of fuel from 1958 to 1965, stating that the recovery of oil increased from 9,2 million tons in 1913 to 113 million tons in 1958. In 1965, it is intended to bring the output of oil to 230 - 240 million tons. Turning to questions of development of the gas industry, he says that the expenditure of labor in recovering natural gas is 20 times below that of coal, and the cost price almost 12 times cheaper. In 1958, the output of gas was 30 billion cu m; in 1965, it will be 150 billion cu m. In respect to caloricity, this quantity of gas will equal the total yearly recovery of coal in the Donets, Pechora and Moscow area basins. Over 80 % of the gas obtained will be used in industry. According to the plan, the plants of Chelyabinsk and later Sverdlovsk will be transferred to gas operation. This means that the Martin furnaces will be transferred to gas operation.

The Materials of the 7-Year Plan in the Teaching of Physics

This means that the Martin furnaces there will be founding steel with cheap gas fuel. Dealing with the gasification of coal, it is stated that 6 underground gasification plants are being built at present. At the Shatskoye brown coal deposit the world's first gas turbine electric power plant has been erected. Particulars on the plant are given in the article. The author states that about 26,000 km of main gas pipe lines, with branches to the cities, will be laid (see map). Pipes 1,020 mm in diameter will be used for this purpose for the first time. By 1965, about 700 large towns and laborer settlements, i.e. half of the town population, will have gas. To protect the gas pipes against corrosion, they are covered with a coating of bitumen. The author describes the working principle of a magneto-electric thickness gage to measure the thickness of the coating. Another chapter of the article deals with the electrification of the USSR. The output in 1958 was 233 billion kwh. There are dozens of power stations with a capacity of 300,000 to 750,000 kw. The capacity of the Volzhskaya gidroelektrostantsiya imeni V.I. Lenina (Volga Hydroelectric Power Plant imeni V.I. Lenin) is

The Materials of the 7-Year Plan in the Teaching of Physics

2,300,000 kw. By 1965, the country's output in electric power will increase to 500 - 520 billion kwh, and 20,000 km of railroads will be electrified. The author outlines the advantages of RR electrification and states that by the end of the 7-year period the per capita output of electric energy will surpass that of Great Britain, France and several other countries. It is emphasized that principally thermal power plants operating on cheap coal, natural gas and mazut will be built, although the cost per unit of electric power remains cheaper when utilizing water resources. Preference is given to thermal electric power plants because it takes less time to build them and they are cheaper. By the end of 1965, the established capacity of all electric power plants will amount to 110,000,000 kw, of which 90,000,000 will be thermal power plants and 20,000,000 kw - hydroelectric plants. The author gives a few details on the capacity and type of turbines of the thermal power plants. It is intended to raise to full capacity the following hydroelectric power plants (being built at present): the Bratskaya of 2,600,000 kw (Fig. 4),

The Materials of the 7-Year Plan in the Teaching of Physics

the Stalingrad - of 2,310,000 kw, the Votkinsk - of 1,000,000 kw, the Bukhtarma - of 525,000 kw, the Kremenchug - of 625,000 kw and others. The Krasnoyarsk GES with a capacity of over 4,000,000 kw will be built. After the completion of the Volga and Lower Dnepr cascades, the Volga and the Dnepr will be transformed into deep-water main transport lines. The entire country will be covered by regional electric power systems, and the length of the electric network of a voltage of 35 to 500 kv will be increased by over 3 times. By the end of 1958, the total length of the electric transmission lines was 100,000 km. At least 92 % of the consumers of electric energy will be supplied by the centralized system by 1965. The direct current line, Stalingrad GES - Donbas, 500 to 600 km long, to be provided by the 7-year plan, is a technical experiment to reveal the advantages and shortcomings of electro-transmission of direct current. On the line Kuybyshev-Moscow, the transmission of alternating current involved a loss of only 4 to 5 %, and the power specialist is now facing the problem of which of the two currents should be transmitted over long distances. In 1950, a transmission

The Materials of the 7-Year Plan in the Teaching of Physics

line of direct current of 112 km in length and of 200 kv was erected between the Kashirskaya GRES (Kashira GRES) and Moscow, beginning this experiment. Dealing with atomic energy, the author states that recently the first stage (100,000 kw) of the atomic electric power plant of 600,000 kw was put in operation. It is working on natural uranium. During the 7-year period several powerful atomic experimental-industrial electric power plants with different types of reactors will be built. Moreover, experimental atomic power plants of 50,000 to 70,000 kw each will be erected. The article also contains information on the manufacture of transformers, the production of which will rise to 83,000,000 kva by 1965. The capacity of the individual single-phase transformer will rise to 300,000 kva. Designing work is being performed for the manufacture of unique transformers of 600,000 to 900,000 kva (for the Bratskaya GES). In turbine construction it is stated that in 1957 the USSR turned out a turbine of 200,000 kw capacity, with initial steam parameters of 130 atm and 565° C. No assemblies of similar capacity and parameters

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The Materials of the 7-Year Plan in the Teaching of Physics

have as yet been made in Western Europe. During the next few years, a unique turbine of 300,000 kw capacity and initial steam parameters of 300 atm and 650° C must be made. The author points to the use of aluminum and ferroaluminum wires, and the application of new insulating material which result in a substantial saving of means and simplification of the technology of coating. A device has been designed making it possible to obtain a wire of up to 1 micron in diameter in a glass insulation less than 2 micron thick. This wire is being used for winding galvanometers and resistances. In conclusion, he deals with the application of ferrites as a means of avoiding loss of current in coil cores, transformers, various relays, and other devices. There are 2 tables, 1 map, 3 drawings, 1 photo and 5 Soviet references.

ASSOCIATION: 437-ya shkola, Moskva (School Nr 437, Moscow)

BAKULEV, A.N., akademik, red.; KOLESNIKOV, S.A., prof., red.; ROVNOV, A.S., prof., red.; RAPOPORT, Ya.L., prof., red.; NEZLIN, V.Ye., prof., red.; BEREZOV, Yu.Ye., prof., red.; STOLYPIN, P.G., nauchn. sotr., red.; LORIYE, K.M., nauchn. sotr., red.; POKROVSKIY, A.V., nauchn. sotr., red.; TSENTSIPER, M.B., nauchn. sotr., red.; ARAPOV, A.D., red.

[Surgical treatment of coronary disease] Khirurgicheskoe lechenie koronarnoi bolezni. Moskva, Meditsina, 1965. 269 p. (MIRA 18:1)

1. Direktor Instituta serdechno-sosudistoy khirurgii AMN SSSR (for Kolesnikov).

BEREZOV, Yu.Ye., prof., red.; KOLESNIKOV, S.A., red.; ROVNOV, A.S., red.; POKROVSKIY, A.V., red.; RABOTNIKOV, V.S., red.; STOLYPIN, P.G., red.; TSENTSIPER, M.B., red.

[Surgery on the aorta and the main large vessels] Khirurgiia aorty i krupnykh magistral'nykh sosudov. Moskva, Meditsina, 1965. 254 p. (MIRA 18:7)

1. Akademiya meditsinskikh nauk SSSR, Moscow. Institut serdechno-sosudistoy khirurgii.

TSENTSIPER, Mikhail Borisovich; SAMARSKAYA, N., red.; SHLENSKAYA, M., tekhn. red.

[A talk on life]Razgovor o zhizni. Moskva, Molodaia gvardiia, 1962. 301 p. (MIRA 16:1)
(Life)

TSENTSIPER, Mikhail Borisovich; ZYUZENKOV, I.P., red.; GLAZUNOVA, N.I., red.; RAKITIN, I.T., tekhn. red.

[The secrets of your heart] Tainy serdtsa tvoego. Moskva, Izd-vo "Znanie," 1962. 45 p. (Narodnyi universitet kul'tury: Fakul'tet zdorov'ia, no.1) (MIRA 15:5)

(HEART)

(A) L 8503-66

ACC NR: AP5028550 SOURCE CODE: UR/0286/65/000/020/0163/0163

AUTHORS: Borisoglebskiy, A. I.; Bulychev, F. V.; Kreps, L. I.; Ryvkin, L. S.; Tsentsiper, M. L. 44,55 44,55 44,55 44,55 44,55 36 13

ORG: none

TITLE: Accumulating fuel pump. Class 46, No. 166199

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 20, 1965, 163

TOPIC TAGS: engine fuel pump, engine fuel system, engine component, internal combustion engine 10,44,55

ABSTRACT: This Author Certificate presents an accumulating fuel pump for internal combustion engines (such as free piston engines). The pump contains a case with coaxially placed cartridges, each of which carries a plunger with curved dosing and conveying rims and a counterplunger connected to the piston of the accumulator. To lower the cost and improve the performance, the counterplunger is provided with an internal cutoff duct connecting the aperture between the plungers to the low pressure zone through a duct in the plunger. The plunger may also contain a duct for feeding fuel to the atomizer.

SUB CODE: 21/ SUBM DATE: 16Jun62

Card 1/1 UDC: 621.43.038.5

2

MEKHEDKO, F.V., otv. red.; KUZNETSOV, B.V., red.; MOSEYEV, I.V., red.; POLZIK, P.V., red.; SOLITERMAN, L.V., red.; TELESH, B.M., red.; TSEMTSIPER, M.S., red.; YUR'YEVICH, G.S., red.

[Exchange of experience in production and technological techniques in power engineering] Obmen proizvodstvenno-tekhnicheskim opytom po promyshlennoi energetike. Minsk, 1965. 105 p. (MIRA 18:10)

1. Nauchno-tekhnicheskoye obshchestvo energeticheskoy promyshlennosti. Belorusskoye otdeleniye.

KLIMOVITSKAYA, S.A.; TSENTSIPER, Ya.L.

Multiple machining of parts at the Sumy Pump Plant. Mashinostroitel' no.1:43 Ja '65. (MIRA 18:3)

PKR'KOV, N.A.; KORSHIKOV, V.N.; KOMAROV, S.G., redaktor; TSENTSIPER, Ye.B., vedushchiy redaktor; TROFIMOV, A.V., tekhnicheskiy redaktor

[Interpretation of radioactive oil well coring diagrams; provisional instructions] Interpretatsiia diagramm radioaktivnogo karottazha skvazhin; vremennoe nastavlenie. Moskva, Gos. nauchno-tekhn. izd-vo neftianoi i gorno-toplivnoi lit-ry, 1956. 56 p. (MLRA 9:8)
(Oil well logging, Radiation)

L 7890-66 EWT(m)/EPF(c)/EWP(j)/T/ETC(m) WW/RM

ACC NR: AP5024957 SOURCE CODE: UR/0286/65/000/016/0020/0020

AUTHORS: Golutvina, L. F.; Pavlov, S. A.; Avilov, A. A.; Butuzkina, Z. A.; Tsentsiper, Z. B.; Plotnikov, I. V.; Abramova, D. S.; Strel'tsova, V. I.

ORG: none

TITLE: Method for obtaining fireproof coverings. Class 8, No. 173702

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 16, 1965, 20

TOPIC TAGS: fireproofing, fireproof covering, sodium bicarbonate, potassium bicarbonate, aluminum sulfate, high polymer, protective coating, fire resistant material, high temperature coating

ABSTRACT: This Author Certificate presents a method for obtaining fireproof coverings on the basis of high polymeric materials containing antipyrenes. To obtain self-extinguishing foam-forming coatings possessing high fire resistance and low heat conduction, a mixture of strong bases (for instance, sodium or potassium bicarbonate), salts of strong acids (for instance, aluminum sulfate), and salts containing water of crystallization (vitriols, alums, and others) are used as antipyrenes.

SUB CODE: MT/ SUBM DATE: 29Dec62

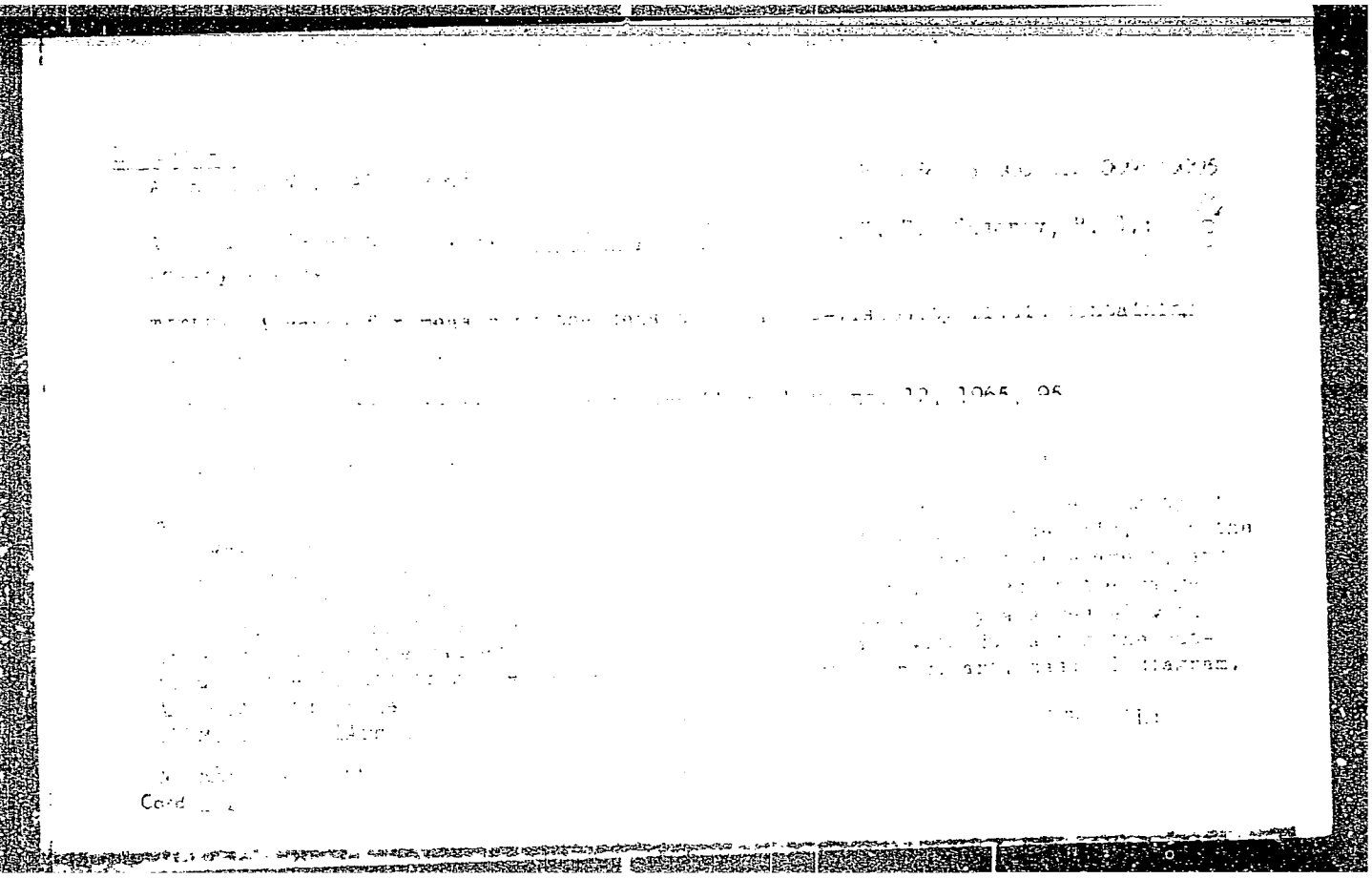
Card 1/1 UDC: 678.049.91

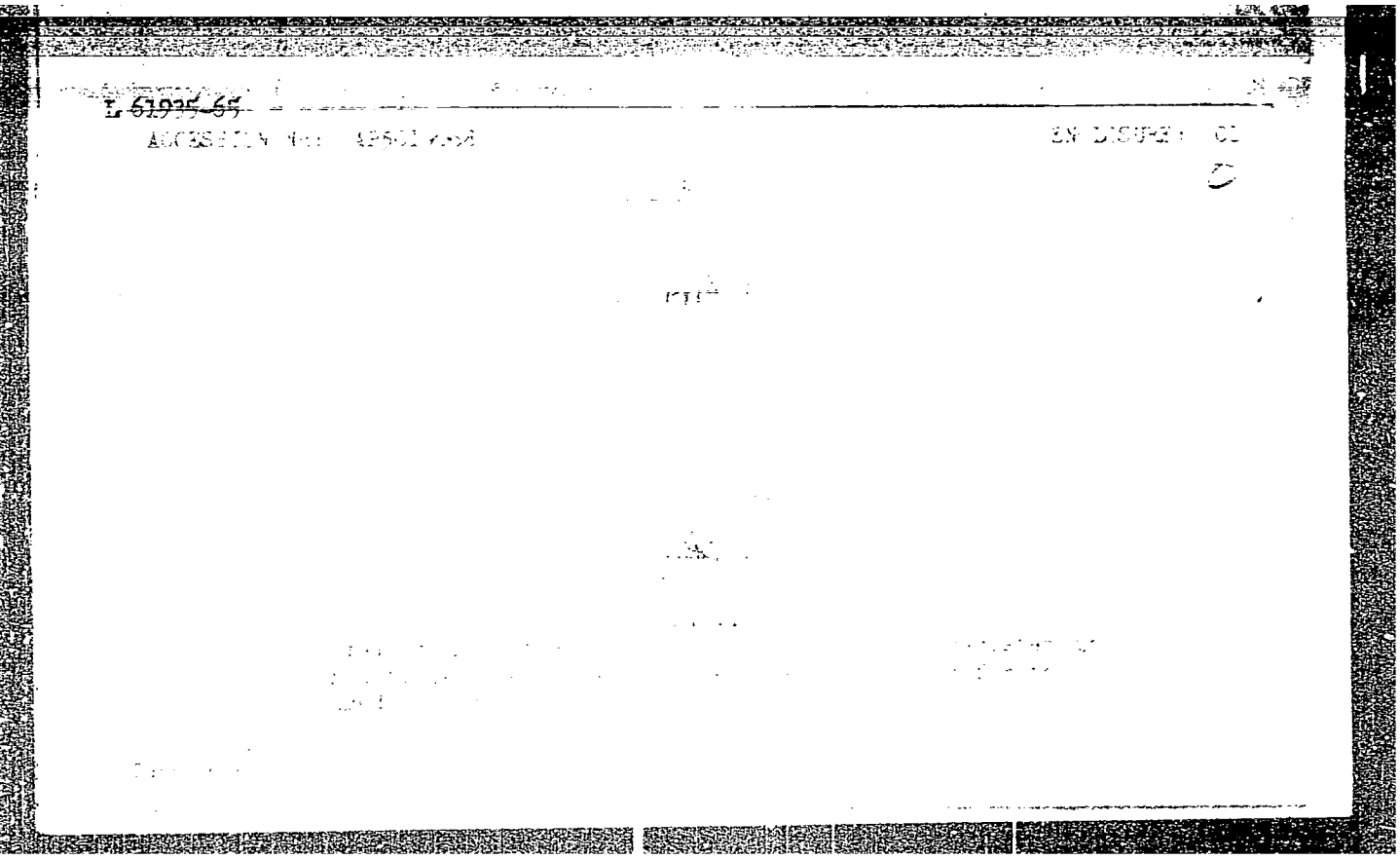
NIKISHINA, M.F.; TSENYUGA, N.S.; GRIGOR'YEVA, G.M.

How SKTN-1 operates. Avt. dor. 27 no.4:15 Ap '64. (MIRA 17:9)

NIKESHIN, M.F.; TSAMYUGA, E.S.; GRIGOR'YEVA, G.N.

Is the SKEN-1 rubber affected by storage time? Kauch. i rez. 24 no.8:29 Ag '65. (MIRA 18:11)





YEREMENKO, B.A.; TSENZURA, A.I.; BAZHAL, I.G.; SUSOROV, B.G.

Method of controlling water feed to the evaporation plant. Sakh. prom. 36 no.5:29-35 My '62. (MIRA 15:5)

1. TSentral'nyy nauchno-issledovatel'skiy institut sakharnoy promyshlennosti.
(Sugar manufacture--Equipment and supplies)
(Automatic control)

YEREMENKO, B.A.; TSENZURA, A.I.; BAZHAL, I.G.; SUSOROV, B.G.; SOLLOGUB, A.A.; BELIK, Yu.N.

Automation of evaporation sections. Sakh. prom. 35 no.11:39-45 N '61. (MIRA 15:1)

1. TSentral'nyy nauchno-issledovatel'skiy institut sakharnoy promyshlennosti (for Yeremenko, TSenzura, Bazhal, Susorov).
2. Ust'-Labinskiy zavod (for Sollogub, Belik).
(Sugar machinery) (Automation)

YEREMENKO, Boris Antonovich; BARABANOVA, Kseniya Aleksandrovna; SUSOROV, Boris Grigor'yevich; FREPON, Nikolay Raymondovich; TSENZURA, Aleksandr Ivanovich; LOSEVA, R., red.; SERGIYENKO, L., red.; SHAFETA, S., tekhn.red.

[Automatic control of the processes of beet-sugar manufacture] Avtomatizatsiia protsessov sveklosakharnogo proizvodstva. Kiev, Gos.izd-vo tekhn.lit-ry USSR, 1960. 133 p. (MIRA 13:8)
(Sugar manufacture) (Automatic control)

TSEOCHOV, Tsv.

Hydraulic resistance at the pressureless movement of liquids in asbestos-cement pipes. Izv Inst khidro melior 5:5-24 '63

UMNOVA, M.A.; PRIVALOVA, L.I.; GUSSEYNOV, Ch.S.; TSEPA, L.S.

Immunological activity in patients with Werlhof's diseases. Probl. gemat. i perel. krovi 8 no.12:25-27 D '63. (MIRA 17:9)

1. Iz TSentral'nogo ordena Lenina instituta gematologii i prelivaniya krovi (dir.- dotsent A.Ye. Kiselev).

TSEPAKIN, S, G,

S/120/62/000/004/006/047
E039/E420

AUTHORS: Malyshev, I.F., Popkovich, A.V., Roshal', G.Ya., Zheleznikov, F.G., Lysov, A.V., Tsepakin, S.G., Solnyshkov, A.I., Boytsov, A.S., Astakhov, Ye.Ya., Mironov, B.V., Lapitskiy, Yu.Ya., Batalin, V.A., Khoroshkov, V.S.

TITLE: The electrostatic accelerator - Injector of the proton synchrotron

PERIODICAL: Pribory i tekhnika eksperimenta, no.4, 1962, 37-45

TEXT: An electrostatic accelerator used as an injector in the 7.0 Gev proton synchrotron developed in 1956 by NIIEFA is described. The pressure chamber is 2200 mm in diameter and 7400 mm high and is intended for working pressures of up to 16 atm. Insulating gas is $N_2$:$CO_2$ mixture with a ratio of partial pressure of 3:1. The main column is of conventional segmented construction using polymethylmetacrylate. Values of the dependence of the voltage produced on the gas pressure shows that 4 MV is obtained at 6.5 atm and 5.7 MV at 16 atm and a relative humidity of $< 1\%$. The charge transporter belt is a six layer

Card 1/2

The electrostatic accelerator ...

fabric driven by a 3000 rpm 10 KW motor at 20 m/sec. The accelerating tube and its electrode system is described in detail: it is 300 mm inner diameter with 44 segments and the residual pressure is 2 to 5 x $10^{-6}$ mm Hg. A Penning type discharge is used in the ion source which provides 0.3 mA total ion current on continuous operation or 20 mA pulsed; the proton component being 10 to 12% and 65% respectively. The energy of the injected particles is stabilized to about 0.1%. Results of operation in 1960-61 show that beam currents of 4 to 5 mA are obtained at 4 MV. There are 10 figures and 1 table.

ASSOCIATIONS: Nauchno-issledovatel'skiy institut elektrofizicheskoy apparatury GKAE (Scientific Research Institute for Electrophysical Apparatus GKAE)
Institut teoreticheskoy i eksperimental'noy fiziki GKAE (Institute of Theoretical and Experimental Physics GKAE)

SUBMITTED: April 6, 1962

Card 2/2

MALYSHEV, I.F.; POPKOVICH, A.V.; ROSHAL', G.Ya.; ZHELEZNIKOV, F.G.; LYSOV, A.V.; TSEPAKIN, S.G.; SOLNYSHKOV, A.I.; BOYTSOV, A.S.; ASTAKHOV, Ye.Ya.; MIRONOV, B.V.; LAPITSKIY, Yu.Ya.; GATALIN, V.A.; KHOROSHKOV, V.S.

Electrostatic accelerator-injector in a proton synchrotron. Prib. i tekh. eksp. 7 no.4:37-45 Jl-Ag '62. (MIRA 16:4)

1. Nauchno-issledovatel'skiy institut elektrofizicheskoy apparatury Gosudarstvennogo komiteta po ispol'zovaniyu atomnoy energii SSSR i Institut teoreticheskoy i eksperimental'noy fiziki Gosudarstvennogo komiteta po ispol'zovaniyu atomnoy energii SSSR.
(Particle accelerators) (Synchrotron)

KALININ, Ye.V., kand.tekhn.nauk; KARPOVA, O.V., inzh.; TSEPAKINA, L.P., inzh.

Dependence of the discharge potential of wet insulators on the time duration the insulator being subject to the action of the potential and on the intensity of the rain. Elek.sta. 33 no.2:59-62 F '62. (MIRA 15:3)

(Electric lines--Overhead)(Electric insulators and insulation)

MANN, A.K., kand.tekhn.nauk; TSEPAKINA, L.P., inzh.

Moisture accumulation in oil-saturated paper insulation of small 110 kv. entrances. Elek.sta. 33 no.2:49-54 F '62. (MIRA 15:3)
(Electric power distribution--Equipment and supplies)

KALININ, Ye.V.; KARPOVA, O.V.; TSEPAKINA, L.P.

Dependence of the discharge potential of wet insulators on the duration of applied voltage and intensity of the rain. Izv. NIIPT no.8:343-350 '61. (MIRA 15:7)
(Electric lines--Overhead)

MANN, A.K.; TSEPAKINA, L.P.

Study of the performance of oil-saturated paper insulation for 110 kv. entrances. Izv. NIIPT no.9:221-240 '62. (MIRA 15:12)
(Electric insulators and insulation)

BUBNOV, N.N.; KRASNOVSKIY, A.A.; UMRIKHINA, A.V.; TSEPALOV, V.E.; SHLYAPINOTOKH, V.Ya.

Electron paramagnetic resonance spectra observable during the illimination of plant leaves and photoreduction of chlorophyll and its analogues. Biofizika 5 no. 2:122-126 '60. (MIRA 14:4)

1. Institut khimicheskoy fiziki AN SSSR i Institut biokhimii im. A.N. Bakha AN SSSR, Moskva.

(CHLOROPHYLL)
(PARAMAGNETIC RESONANCE AND RELAXATION)

TSEPALOV, V.F.; SHLYAPINTOKH, V.Ya.

Rate constants for elementary reactions in the process of oxidation of ethylbenzene by molecular oxygen. Kin.i kat. 3 no.6:870-876 N-D '62. (MIRA 15:12)

1. Institut khimicheskoy fiziki AN SSSR.
(Benzene) (Oxidation)
(Chemical reaction, Rate of)

TSEPALOV, V.F.

Automatic device for measuring the absorption of small amounts of gas. Zav. lab. 30 no.1:111 '64. (MIRA 17:9)

1. Institut khimicheskoy fiziki AN SSSR.

5(4) SOV/62-59-4-10/42

AUTHORS: Tsepalov, V. F., Shlyapintokh, V. Ya.

TITLE: Mechanism of the Photoreduction of Xanthene Dyestuffs (Mekhanizm reaktsii fotovosstanovleniya ksantenovykh krasiteley)

PERIODICAL: Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk, 1959, Nr 4, pp 637-643 (USSR)

ABSTRACT: The photoreduction of xanthene dyestuffs consists in a transformation of the dyestuff into a colorless leuco compound; the dyestuff is completely bleached out when the reaction is completed. Eosine, erythrosine, chemically pure Bengal pink and ("ch.d.a")ascorbic acid were used in the present work whereas ethanol and pyridine were used as solvents. A typical kinetic curve of the potential change of the platinum electrode dipped in the dyestuff solution exposed to light is shown in figure 1. It is seen that the potential changes quickly in the negative direction upon exposure to light to reach the minimum and return to the initial value. This course has been ascribed to the presence of an intermediate product formed during the reduction of the eosine. With the aid of potentiometric measurements it has been found that the intermediate products formed during the

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reduction of the dyestuffs are sufficiently stable and have a life of $-30^{\circ}$ to $-40^{\circ}$ minutes. In view of the data found on the life and on the conditions under which the highest concentrations of intermediate products can be obtained the photoreduction of the xanthene dyestuffs has been subjected to spectral analysis. The spectra of the intermediate products are shown in figure 3. As the spectrum of an intermediate product depends neither on the dyestuff nor on the reducing agent this compound can be assumed not to form any complex with the dyestuff or the reducing agent. Figure 4 shows the kinetic curves of the intermediate products of eosine and the potential change of the electrode determined during an experiment conducted at room temperature. These data indicate that the concentration of the intermediate product at the time when the light is removed is $c_{EN} \geqslant 7,8 \cdot 10^{-6}$ or 20% of the initial concentration of the eosine. The highest concentration reaches 35%. Based on the same data the molar absorption coefficient of the intermediate product has been obtained $(E_{EN})_{427} \leqslant 1.1 \cdot 10^{4}$ l/mole-cm. As is apparent from figure 5 the highest optical density of the inter-

mediate product at $-35^{\circ}$ reaches 0.62, which means that it is about five times higher than at room temperature. The estimation of the maximum concentration in view of the amount of dyestuff regenerated after the removal of light has led to the values $c_{EN} \geqslant 42\%$ of the initial eosine and $(E_{EN})_{427} \leqslant 4.4 \cdot 10^4$ l/mole-cm. The cause for the great variation of the $E_{EN}$ values with temperature has not been clarified.

It becomes evident from figure 6 that the potential reaches the zero level more quickly at a higher concentration of the reducing agent. This shows that the intermediate product is consumed more quickly than it is formed. There are 7 figures and 5 references, 2 of which are Soviet.

ASSOCIATION: Institut khimicheskoy fiziki Akademii nauk SSSR (Institute of Chemical Physics of the Academy of Sciences, USSR)

SUBMITTED: July 10, 1957

TSEPALOV, V.F.

Kinetics of chain conversion of multicomponent systems. Part 1: Multicomponent system. Equations for the velocity and composition. Zhur. fiz. khim. 35 no.5:1086-1090 My '61. (MIRA 16:7)

1. Institut khimicheskoy fiziki AN SSSR.
(Chemical reaction, Rate of)

ACCESSION NR: AP4019518 S/0076/64/038/002/0351/0355

AUTHORS: Tsepalov, V.F. (Moscow); Shlyapintokh, V.Ya.(Moscow); Chou, P'ei-huang (Moscow)

TITLE: Kinetics of cooxidation of cumene and ethylbenzene II. Determination of rate constants of cross reactions of chain extensions and rupture.

SOURCE: Zhurnal fizicheskoy khimii, v.38, no.2, 1964, 351-355

TOPIC TAGS: cumene ethylbenzene cooxidation, ethylbenzene peroxide, cumene peroxide, cumene, benzene

ABSTRACT: This is a continuation of the work by the same authors (Zh.F.Kh.,38. 1964) covering the kinetics of cooxidation of the same compounds at 60 and 80C. The purpose of the present work is to correct data concerning the rate constant of recombination of peroxide radicals of cumene as given by H. Melville, S. Richards (J.Chem.Soc. 944, 1954) which were based on an erroneous assumption on the initiation of two chains. The kinetic regularities observed in the cooxidation of cumene and ethylbenzene are qualitatively interpreted. Values

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ACCESSION NR: AP4019518

are obtained for the rate constant of the cumene peroxide radical reaction with ethylbenzene, of ethylbenzene peroxide with cumene, and of both peroxide radicals with one another. The oxidation rates of each component change when mixed showed: cumol in ethylbenzine is oxidized 6 times slower than pure cumol and ethylbenzene in cumol oxidizes 14 times faster than alone. Orig. art. has 2 figures, 8 formulas, 2 tables.

ASSOCIATION: Institut khimicheskoy fiziki AN SSSR (Institute of Chemical Physics, AN SSSR)

SUBMITTED: 21Dec63 DATE ACQ: 31Mar64 ENCL: 00

SUB CODE: GC NR REF SOV: 003 OTHER: 008

Card 2/2

24 (7) SOV/48-23-10-36/39

AUTHORS: Bubnov, N. N., Tsepalov, V. F., Shlyapintokh, V. Ya.

TITLE: The Spectra of Paramagnetic Electron Resonance of Eosin Semiquinone in a Live Leaf

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1959, Vol 23, Nr 10, pp 1265 - 1266 (USSR)

ABSTRACT: The present paper intends to explain the nature of the intermediate products in the photochemical reactions of eosin and chlorophyll. The investigations were carried out at room temperature with high-frequency modulation of the magnetic field. Method and apparatus are described in references 1 and 2. First, some results concerning the photoreduction of eosin are discussed. This reaction consists in the transformation of the dye into a leuco-compound and has already been potentiometrically and spectroscopically investigated (Refs 3,4). The authors assumed that a comparatively stable intermediate product is formed (semiquinone dye), which may have a life of several seconds at room temperature. An investigation of the paramagnetic electron resonance spectrum of eosin (solvent: piridine, reducer: ascorbic acid) showed a

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The Spectra of Paramagnetic Electron Resonance of Eosin Semiquinone in a Live Leaf SOV/48-23-10-36/39

triplet splitting (intensity ratio 1:2:1, $\Delta H = 4.6 \pm 0.2$ Gs) which is caused by the interaction between the unpaired electron and two protons. The photochemical reaction which develops by way of a biradical, is shown schematically and has already been described by Schenck (Ref 5). The authors of the present paper were the first to investigate the resonance spectrum of a live leaf. A leaf of agrophyrum repens was used for this purpose. The resonance signal showed a doublet, hyperfine splitting amounted to $\Delta H = 1.8 \pm 0.2$ Gs. There are 5 references, 4 of which are Soviet.

ASSOCIATION: Institut khimicheskoy fiziki Akademii nauk SSSR (Institute of Chemical Physics of the Academy of Sciences, USSR)

Card 2/2

KOZLOVA, Z.G.; TSEPALOV, V.F.; SHLYAPINTOKH, V.Ya.

Mechanism of hydrocarbon oxidation catalyzed by cobalt salts.
Kin. i kat. 5 no.5:868-876 S-O '64. (MIRA 17:12)

1. Institut khimicheskoy fiziki AN SSSR.

EMANUEL', Nikolay Markovich; DENISOV, Yevgeniy Timofeyevich; MAYZUS, Zinaida Kushelevna. Prinimali uchastiye: ANTONOVSKIY, V.L.; BLYUMBERG, E.A.; VASIL'YEV, R.F.; GAGARINA, A.B.; GOL'DBERG, V.M.; ZAIKOV, G.Ye.; DORIKOV, Yu.D.; OBUKHOVA, L.K.; TSEPALOV, V.F.; SHLYAPINTOKH, V.Ya.; SKIBIDA, I.P., red.

[Oxidation chain reactions of hydrocarbons in the liquid phase] TSepnye reaktsii okisleniia uglevodorodov v zhidkoi faze. Moskva, Nauka, 1965. 374 p. (MIRA 18:8)

TSEPALOV, V.F.; SHLYAPINTOKH, V.Ya.; CHZHOU FEY-KHUAN [Chou P'ei-huang]

Kinetics of the simultaneous oxidation of cumene and ethylbenzene. Part 2. Zhur. fiz. khim. 38 no.2:351-355 F '64. (MIRA 17:8)

1. Institut khimicheskoy fiziki AN SSSR.

ACCESSION NR: AP4016517 S/0195/64/005/001/0064/0070

AUTHOR: Lebedev, Ya. S.; Tsepalov, V. F.; Shlyapintokh, V. Ya.

TITLE: Measuring the stationary peroxide radical concentration in the cumene oxidation reaction by the EPR method

SOURCE: Kinetika i kataliz, v. 5, no. 1, 1964, 64-70

TOPIC TAGS: peroxide radical, concentration determination, cumene oxidation, peroxide radical formation, liquid phase oxidation, recombination rate, cobalt stearate catalyst, azobisisobutyronitrile, dicyclohexylpercarbonate, EPR analysis, cumyl peroxide

ABSTRACT: A study of the liquid phase oxidation of hydrocarbons showed that the peroxide radical recombination rate constant is approximately the same for olefinic materials, and 1-2 orders higher for aromatic hydrocarbons. Cumyl peroxide was selected for further study since it has the smallest recombination rate constant. The oxidation of cumene was then effected in the resonator

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ACCESSION NR: AP4016517

of the EPR spectrometer. The reaction was catalyzed with cobalt stearate or initiated with azobisisobutyronitrile or with dicylohexylpercarbonate. In changing the concentration of the latter from 0.02-0.55 mol./1., at 68-90C, the initiation rate changed by a factor of 50, from $5 \times 10^{-6}$ to $2.4 \times 10^{-4}$ mol/l·sec. The EPR spectra, determined by the cumyl peroxide radicals, are identical, although oxidation was initiated by different radicals. The peroxide radical concentration measured in this work essentially approaches the values calculated from the known rate of initiation and the recombination rate constant. The slightly lower measured values are explained as due to experimental errors such as insufficient $O_2$, incorrect placement of the ampoule in the resonator, etc. Orig. art. has: 2 figures, 4 equations, 1 formula

ASSOCIATION: Institut khimicheskoy fiziki AN SSSR (Institute of Chemical Physics AN SSSR)

SUBMITTED: 26Apr62 DATE ACQ: 18Mar64 ENCL: 00
SUB CODE: CH, PH NO REF SOV: 007 OTHER: 013

Card 2/2

SOV/20-128-3-38/58

5(4)
AUTHOR: Tsepalov, V. F.

TITLE: A Study of the Interaction Between Chains in Complicated Chain Processes

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 128, Nr 3, pp 571-574(USSR)

ABSTRACT: A general formula for the kinetics of the reaction in complicated mixtures is deduced under consideration of special cases. The scheme of a complicated chain reaction is described as: initiation of chain reaction, rate $W_I$, continuation of the chain reaction

$$A_i + n_j \xrightarrow{K_{pij}} n_i + \text{inactive product;}$$

linear rupture of the chain reaction

$$M_i + n_j \xrightarrow{K_{sij}} \text{inactive product;}$$

square rupture of the chain reaction

$$n_i + n_j \xrightarrow{K_{tij}} \text{inactive product.}$$

n denotes the active centers, A the substance, which participates in the chain reaction, M the substance on which the linear rupture occurs. Equations are given for the consumption rate of the i-th component (1), for the equilibrium condition of formation and consumption in the i-th active center (2) and for the

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A Study of the Interaction Between Chains in Complicated Chain Processes

condition for equal rates of formation and destruction of active centers (3). A general solution is deduced of it in form of an equation (4). The conditions for linear and square rupture are determined, further the effect of a second substance $A_2$ on the reaction rate, the criterion of acceleration and retardation of chain reaction and finally the conditions under which extrema occur are investigated. At last the common chain reaction $A_1 \longrightarrow A_2 \longrightarrow$ inactive product is analyzed and the validity of the acceleration and retardation criterions is also verified for this case. There are 7 references.

ASSOCIATION: Institut khimicheskoy fiziki Akademii nauk SSSR
(Institute of Chemical Physics of the Academy of Sciences, USSR)

PRESENTED: June 18, ,59, by V. N. Kondrat'yev, Academician

SUBMITTED: May 13, 1959

S/195/62/003/006/005/011
E075/E436

AUTHORS: Tsepalov, V.F., Shlyapintokh, V.Ya.

TITLE: Rate constants of elementary reactions in the oxidation of ethylbenzene with molecular oxygen

PERIODICAL: Kinetika i kataliz, v.3, no.6, 1962, 870-876

TEXT: The method of intermittent illumination was used to determine the rate constants for the elementary reactions of chain propagation and stoppage. The rate of oxidation was measured by $O_2$ absorption in a vacuum apparatus with an automatic pressure regulator. Light was emitted from a Hg lamp, the pulse duration ranging from 0.002 to 10 sec. Anthrachinone ($1.4 \times 10^{-4}$ mole/litre) was used as a photosensitizer. The reaction vessel was shaken to make the oxidation not dependent on diffusion of $O_2$. The oxidation was carried out at 1 atm between 50 and 90°C, the degree of oxidation of ethylbenzene not exceeding 0.5%. The oxidation scheme considered was: chain initiation

(I) $\dot{R}$ or $R\dot{O}_2$, rate of initiation $W_i$; chain propagation

(II) $\dot{R} + \dot{O}_2 \xrightarrow{k2} R\dot{O}_2$ and (III) $R\dot{O}_2 + RH \xrightarrow{k3} RO_2H + \dot{R}$.

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Rate constants ...

Chain rupture gives inactive products as follows:

(IV) $2\dot{R} \xrightarrow{k4}$ (V) $\dot{R} + R\dot{O}_2 \xrightarrow{k5}$ (VI) $2R\dot{O}_2 \xrightarrow{k6}$ and

(VII) $R\dot{O}_2$ + inhibitor $\xrightarrow{k7}$ . The reaction rate applicable to short and long chains is given by

$$\frac{d[O_2]}{dt} = k_3 k_6^{-1/2} W_i^{1/2} [RH] + \frac{1}{2} W_i \qquad (3)$$

$W_i$ was determined by inhibiting the reaction with α-naphthol. As $(d[O_2])/(dt)$ varied linearly with the reciprocal of the inhibitor concentration $(1/[B])$ the values of $W_i$ were determined graphically by extrapolating $1/[B]$ to zero. The values of $k_3 \times k_6^{-1/2}$ were determined by three independent methods (inhibition with α-naphthol, inhibition with azo-bis-isobutyronitrile, oxidation in the presence of cobalt acetate catalyst) and ranged from 4.00 at 50°C to 22.2 (1 mole x sec)$^{1/2}$ x $10^{-4}$ at 100°C. The agreement between the values determined by the three

Rate constants ...

methods indicated that in the photosensitized oxidation $H O_2$ radicals did not take part in chain rupture, the rupture occurring via peroxide radicals. The mean life of radicals $RO_2$ is given by

$$\tau = \frac{[R\dot{O}_2]}{k_6[\dot{R}O_2]^2} = \frac{1}{k_6[\dot{R}O_2]} \quad \text{and} \quad \tau = k^{-\frac{1}{2}} W_i^{-\frac{1}{2}} \qquad (4)$$

The quantity $\tau \times W_i^{1/2}$ did not change with temperature, which indicated that the activation temperature of the radical recombination is zero. The mean value of $k_6$ was $3.2 \times 10^{-4}$ $cm^3/sec$. From this value the constant $k_3$ for the chain propagation was found to be $1.6 \times 10^{-15} e^{-8500/RT}$ $\frac{cm^3}{sec}$.

The constant $k_7$ was calculated using the equation

$$\frac{d[O_2]}{d\tau} = W_i \left(1 + \frac{k_3[RH]}{k_7[B]}\right) \qquad (5)$$

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Rate constants ...

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For the inhibition by α-naphthol,

$$k_7 = 1.7 \times 10^{-12} e^{-6800/RT} \frac{cm^3}{sec}$$

There are 3 figures and 2 tables.

ASSOCIATION: Institut khimicheskoy fiziki AN SSSR
(Institute of Chemical Physics AS USSR)

SUBMITTED: October 31, 1961

Card 4/4

AUTHOR: Lebedev, Ya. S., [illegible]

TITLE: Use of electron paramagnetic resonance for the study of active centers in liquid-phase oxidation reactions

SOURCE: Soveshchaniye po fizicheskim metodam issledovaniya stroyeniya molekul organicheskikh soyedineniy i khimicheskikh protsessov, Frunze, 1962. Trudy. Frunze, Izd-vo Ilim, 1964, 190-195

TOPIC TAGS: electron paramagnetic resonance, liquid phase oxidation, active center, EPR spectrum, peroxide radical, cumene oxidation

ABSTRACT: This investigation was undertaken to determine the steady concentration of [illegible] spectra. Experiments were conducted [illegible] quency modulation field. The instrument recorded the first derivative of the EPR line of the peroxide radical, simultaneously with the signal from the standard sample (Fe[illegible]). The reaction [illegible] in an EPR resonator of the

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ACCESSION NR: AT5002264

Temperature was measured with a thermocouple immersed in the ampule. Oxygen was bubbled through the sample. Free radicals were observed and identified, from their spectra, as cumene peroxide radicals. Experiments on the measurement of the steady-state concentration of cumene peroxide radicals were conducted at 68-90C and with concentrations of I of 0.02-0.55 mole/liter. Initiation speeds varied from $5\times10^{-6}$ to $2.4\times10^{-4}$ mole/liter.sec. With I, the speed was calculated from $w_i=1.2\times1.58\times10^{15}\cdot e^{-\frac{30800}{RT}}$. Absolute values of the experimental concentrations of peroxide radicals lay within $5\times10^{15}$--$4\times10^{16}$ radicals/cm$^3$. Calculated and measured values were close. Orig. art. has: 1 table, 2 figures and 3 formulas.

ASSOCIATION: Institut khimicheskoy fiziki AN SSSR (Chemical physics institute, AN SSSR)

SUBMITTED: 19Jun64 ENCL: 00 SUB CODE: GC, NP

NO REF SOV: 005 OTHER: 011

Card 2/2

SHUVALOV, V.F.; LEBEDEV, Ya.S.; TSEPALOV, V.F.; SHLYAPINTOKH, V.Ya.

Electron paramagnetic resonance spectra of peroxide radicals in the liquid phase. Zhur. fiz. khim. 38 no.5:1287 My '64. (MIRA 18:12)

1. Institut khimicheskoy fiziki AN SSSR. Submitted March 28, 1963.

TSEPLYAYEV, Vasiliy Petrovich; KOVALIN, D.T., red.

[Forest economy of the U.S.S.R.; principal results of forestry work] Lesnoe khoziaistvo SSSR; osnovnye itogi lesokhoziaistvennoi deiatel'nosti. Moskva, Lesnaia promyshlennost', 1965. 407 p. (MIRA 19:1)

PKR'KOV, N.A.; KORSHIKOV, V.N.; KOMAROV, S.G., redaktor; TSENTSIPER, Ye.B., vedushchiy redaktor; TROFIMOV, A.V., tekhnicheskiy redaktor

[Interpretation of radioactive oil well coring diagrams; provisional instructions] Interpretatsiia diagramm radioaktivnogo karottazha skvazhin; vremennoe nastavlenie. Moskva, Gos. nauchno-tekhn. izd-vo neftianoi i gorno-toplivnoi lit-ry, 1956. 56 p. (MLRA 9:8)
(Oil well logging, Radiation)

KHRAMIKHIN, F.G., kandidat tekhnicheskikh nauk, redaktor; TSENTSIPER, E.B., vedushchiy redaktor; TROFIMOV, A.V., tekhnicheskiy redaktor

[A collection of summaries of research papers of the All-Union Scientific Research Institute for Petroleum Construction during 1954] Sbornik annotatsii nauchno-issledovatel'skikh rabot VNIIStroi-nefti za 1954 g. Pod obshchei red. F.G.Khramikhina. Moskva, Gos. nauchno-tekhn. izd-vo neftianoi i gorno-toplivnoi lit-ry, 1955. 43 p. (MLRA 10:3)

1. Moscow. Vsesoyuznyy nauchno-issledovatel'skiy institut po stroitel'stvu.

(Petroleum industry--Equipment and supplies)

IVANTSOV, Oleg Maksimovich; TSENTSIPER, E.B., vedushchiy redaktor; ERDENKO, B.S., tekhnicheskiy redaktor

[Underground storage of petroleum products and liquified gases in natural cavities; experiences in foreign countries] Podzemnoe khranenie nefteproduktov i szhizhennykh gazov v prirodnykh emkostiakh; zarubezhnyi opyt. Moskva, Gos.nauchno-tekhn. izd-vo neftianoi i gorno-toplivnoi lit-ry, 1956. 53 p. (MLRA 9:7)
(Gases--Storage) (Petroleum products--Storage)

POL'SKIY, S.M.; TSENTSIPER, E.B., vedushchiy redaktor; TROFIMOV, A.V., tekhnicheskiy redaktor

[Volumetric measuring devices for petroleum products] Ob"emnye schetchiki dlia nefteproduktov. Moskva, Gos. nauchno-tekhn. izd-vo neftianoi i gorno-teplivnoi lit-ry, 1956. 59 p. (MLRA 9:7)
(Flow meters) (Petroleum--Pipelines)